Breakthrough Los Alamos software is available for licensing

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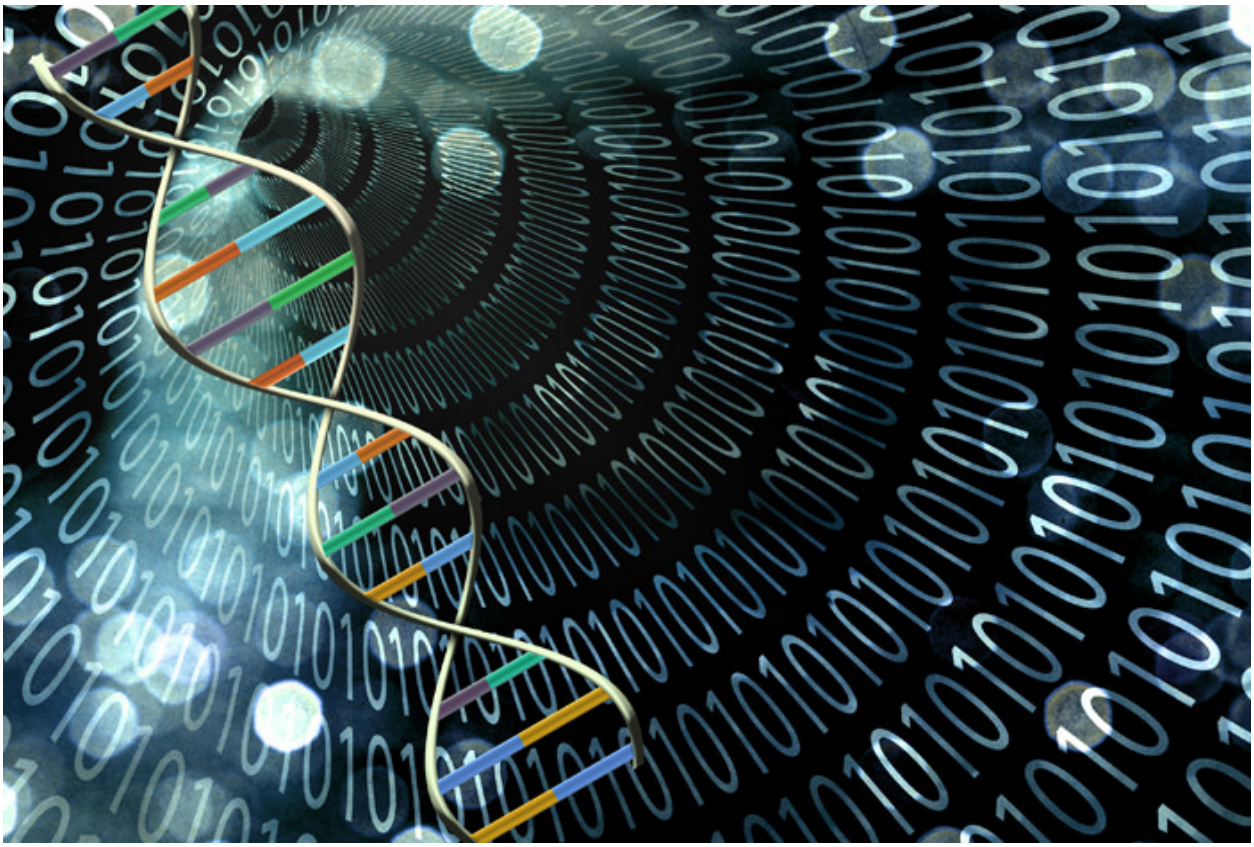

Los Alamos National Laboratory has released Sequedex V1, an updated version of its powerful, award-winning Sequedex software that is capable of identifying DNA from viruses and all parts of the Tree of Life. The software has been beta-tested for the past two years by nearly 50 institutions around the world and is ready for licensing. The technology classifies fragments 250,000 times faster than conventional methods.

Los Alamos scientists Ben McMahon, Nick Hengartner, Judith Cohn, Mira Dimitrijevic and Joel Berendzen designed Sequedex to perform analyses without the need for a bioinformatician to perform the calculations and interpret the results.

Although the super-fast software currently serves only as a research tool, it puts solutions for diverse problems, such as identifying pathogen-caused diseases, selecting therapeutic targets for cancer treatment and optimizing yields of algae farms, within the potential reach of health-care and other professionals.

The Sequedex software recognizes patterns in short DNA sequences and then associates those sequences with phylogeny—the sample's placement on the evolutionary Tree of Life—and the function of the fragment. In evolutionary terms, a "Tree of Life" is a representation of the genetic divergence of modern species from a common ancestor. Based on the recognition of the DNA pattern, the software creates a database of results.

Sequedex analyzes phylogeny and function in a fashion similar to doing a search in a web browser, where entering the search terms "plumber," "Smith" and "Chicago" might return links to plumbers in the windy city named Smith.

"As part of our testing, we used Sequedex to identify virus sequences in a collaborator's clinical blood sample from Africa," Ben McMahon said. "In the course of an afternoon, the software had identified a deadly rabies virus, something that would have taken weeks of work using conventional methods. Sequedex software can now identify sequences from viruses and fungi at parts-per-million levels in a sequenced sample."

Sequedex V1 currently is available under a free six-month demonstration license and can be downloaded from the Laboratory's Sequedex website. For additional information, email the Richard P. Feynman Center's Licensing Team at licensing@lanl.gov.